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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,983	10/19/2001	Yasuhiro Iwamura	215141US2	7491
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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			KEITH, JACK W	
			ART UNIT	PAPER NUMBER
			3641	

DATE MAILED: 10/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/981,983

Applicant(s)
Iwamura et al

Examiner
Jack Keith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Aug 15, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above, claim(s) 3 and 7-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, and 4-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Election/Restriction

1. Applicant's election with traverse of invention I, species A, b, bii, iii and (1) in Paper Nos. 11 and 13 is acknowledged. The traversal is on the ground(s) that the office has not provided a burden of proof to establish distinctness between groups I and II. Applicant further argues that groups I and II are classified within the same art therefore no burden exists on the examiner to search both inventions. Applicant additionally argues species election/restriction citing that the examiner omitted how and in what manner the species are "mutual exclusive". Thus no burden on the examiner has been established.

This is not found persuasive. As set forth in Paper no. 10 inventions II and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process as claimed can be practiced by another materially different apparatus such as the transmutation of nuclides by utilizing a charged particle beam apparatus or a sonofusion apparatus. Furthermore, conventional nuclear reactors can also be utilized to accomplish the transmutation of nuclides. The examiner has clearly shown the requirement necessary per MPEP § 806.05(e). Applicant failed to argue that the claimed process can not be practiced by the materially different apparatus set forth by the examiner. With regard

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to applicant's argument that the groups are classified within the same art (i.e., 376). A thorough search of the invention in questions reveals numerous classes applicable to applicant's invention (e.g., 204, 205, 250, etc.).

With regard to applicant's arguments regarding the species election/restriction citing that the examiner omitted how and in what manner the species are "mutual exclusive" note that claims are never species, rather species are related to specifically different embodiments. Applicant discloses in the figures alone at least 4 separate embodiments. However, as set forth in Paper no. 10 if applicant submits evidence or identifies such evidence now of record showing the species to be obvious variants of one another the species election/restriction requirement will be withdrawn. or clearly admit on the record that this is the case.

The requirement is still deemed Proper and is therefore made FINAL.

2. Claims 3 and 7-9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention/species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 11 and 13.
3. An action on merits to claims 1-2 and 4-6 follows.

Information Disclosure Statement

4. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be

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incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to provide an adequate written description of the invention and as failing to adequately teach how to make and/or use the invention, i.e. failing to provide an enabling disclosure.

There is no reputable evidence of record to support any allegations or claims that the invention is capable of operating as indicated in the specification, that any allegations or claims of "nuclear transmutation", "nuclear reactions", "electron-induced nuclear reactions (EINR)" or "excess heat or thermal energy", any allegation or claims of production of energy due to nuclear and/or chemical reactions are valid and reproducible, nor that the invention as disclosed is capable of operating as indicated and capable of providing useful output.

The invention is directed to an apparatus for nuclide transmuting. Incorporation of said transmutation nuclide into a hydrogen absorbing metal via lamination process wherein one side of the hydrogen absorbing metal is exposed to a light element electrolyte or gas (e.g., hydrogen,

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deuterium, tritium) to allegedly induce the nuclear transmutation via a pressure differential between the two sides of the hydrogen absorbing metal (e.g. see specification page 4, lines 15+).

This concept of producing “nuclide transmutation” or “EINR” is considered as being based on the “cold fusion” concept set forth by Fleischmann and Pons (see the 3/24/89 article by D. Braaton)(also see specification page 1, lines 20+). This is further attested to by Moore (see the 7/14/2003 article by B. Moore) wherein EINR is identified as being based upon the concept set forth by Fleischmann and Pons. While Fleischmann and Pons relied on electrolysis of heavy water to incorporate deuterium into a solid metal lattice, it was also known that deuterium could be incorporated into the metal by non-electrolytic means (e.g., gaseous, plasma, etc.).

Fleischmann and Pons stated their belief that the large amounts of energy generated in their “cold fusion” system, was the result of nuclear reactions taking place between the deuterium isotopes in the metal lattice. Applicant theorizes that in his “nuclide transmutation” or “EINR” are actually the result of the hydrogen deposition in solid materials (i.e., palladium, CaO) at increased pressure and temperatures; thus, enabling the transmutation process to occur (e.g. see specification page 13+).

While applicant theorizes as to whether his “nuclide transmutation” or “EINR” results from nuclear effects (e.g. see page 22, line 21+ of the specification) there is no reputable evidence of record showing that the transmutation, heat, etc. allegedly generated in his tests or experiments (e.g. see pages 23, lines 12+ of the specification) could not have actually been the result of chemical reactions. Accordingly, said “nuclide transmutation” or “EINR” referred to in

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applicant's specification, must be the result of, as admitted by applicant (see Iwamura et al Detection of Anomalous elements, x-rays, and excess heat induced by continuous diffusion of deuterium through multilayer cathode (Pd/CaO/Pd), 7th International Conference on Cold Fusion, p. 167, 1998), cold nuclear fusion reactions.

Applicant's invention is thus accordingly considered as being no more than a "cold fusion" system or at most, a variation of the "cold fusion" system set forth by Fleischmann and Pons. Note further, that merely proposing a new or different theory to account for the alleged production of nuclear reaction products (including large amounts of generated energy) in such systems wherein deuterium has been incorporated into a metal lattice, does not change such systems into non-cold fusion systems.

As set forth more fully below, this "cold fusion" concept of producing nuclear reaction products (including enhanced energy generation (known in the art as "excess heat"), transmutation, etc.) by incorporating deuterium into a metal lattice, is still no more than just an unproven concept.

Subsequent to the announcement of this cold fusion concept by Fleischmann and Pons, many laboratories have attempted to confirm the results of Fleischmann and Pons.

The results of these attempts at confirmation were primarily negative and even of the few initial positive results, these were generally either retracted or shown to be in error by subsequent experimenters (see for example, the article by Stipp in the Wall Street Journal and the article by Browne in The New York Times (particularly page A22)).

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The general consensus by those skilled in the art and working at these various laboratories is that the assertions by Fleischmann and Pons were based on experimental errors (e.g. see The New York Times article by Browne, Kreysa et al, Lewis et al, Hilts, Horanyi, Ohashi et al, MisKelly et al and Chapline).

Note for example, that Kreysa et al on page 440 state that “We have repeated the heat balance measurements more than 10 times and never found a significant heat excess within the accuracy limits of $\pm 5\%$.”. Kreysa et al also refer to various possible sources of error which could lead to erroneous conclusion that nuclear reactions and excess heat was produced.

Hilts states the MIT experiments failed to produce any of the excess heat reported by the Utah group.

Lewis et al state in the summary on page 525 that they found no evidence of excess enthalpy in their experiments and, they refer to various possible sources of error which could lead to the erroneous conclusion that nuclear reactions and excess heat was produced (note pages 528-530).

Both Hilts and Lewis et al indicate that in any determination of excess heat, one must determine the total amount of energy produced (as heat and chemical energy) integrated over the whole period of cell operation, versus the total energy input.

It was also the general consensus by those skilled in the art and working at these various laboratories that there is no reputable evidence of neutron, gamma ray, tritium or helium production to support the allegation or claim that nuclear reactions are taking place, nor is there

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any reputable evidence to support the allegation or claim of excess heat production. See for example (in addition to the above listed references) page A14 of the 7/13/89 edition of The Washington Post, Cooke, Alber et al, Faller et al, Cribier et al, Hajdas et al, Shani et al, Ziegler et al, Price et al, Schrieder et al and pages A3 of the 3/29/90 edition of The Washington Post.

Of particular interest is page A3 of the 3/29/90 edition of The Washington Post (which refers to the negative findings of a physicist who had tested Pon's own cold fusion apparatus, for nuclear output (for a more complete analysis of said "negative findings", note the article by Salamon et al). Also of interest in this respect is the Cooke reference which on pages 4 and 5, refers to the attempts at Harwell to obtain "cold fusion" and that Fleischmann (of Fleischmann and Pons) had requested help from Harwell in verifying the cold fusion claims. Said page 5 also indicates that data was collected in Frascatti-type (i.e. gaseous) experiments.

The last paragraph on said page 5 states:

"After three months of around-the-clock work at a cost of over a half million dollars, the project was terminated on June 15. This program is believed to be one of the most comprehensive worldwide with as many as 30 cells operating at a time and over 100 different experiments performed. The final results of this monumental effort in the words of the official press release was, " In none of these experiments was there any evidence of fusion taking place under electrochemical conditions". It should also be added that there was no evidence of excess heat generated by any of their cells." (Underling added).

Applicants specification contains assumptions and speculation as to how and in what manner, his invention will operate (see specification page 13+). Indeed, applicant appears to be basing the operativeness of his invention on various approximations, estimations, assumptions,

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etc., set forth for example on said pages 13+ of the specification. It can be said that one could manipulate any number of approximations, estimations and assumptions to come up with a result which would allegedly “work” in theory. However, applicant has presented no reputable factual evidence to support his assumptions and speculation, that his invention is operative. Without reputable evidence to the contrary, the accepted scientific community theory is presumed correct. The disclosure is insufficient in failing to set forth the underlying assumptions for applicants theory as well as applicants appraisal of the degree of validity of said assumptions.

The specification (see page 23+) appears to refer to tests or experiments wherein a solid materials with depositions of hydrogen produced nuclide transmutation when subjected to pressure/temperature diffusion of the hydrogen. However, these indications or allegations are not sufficient to overcome the numerous teachings by skilled artisans, (set forth above by the examiner) that the allegations of the obtainment of said nuclear transmutation/enhanced energy generation in a cold fusion system (whether electrochemical, plasma gaseous, solid state, etc.) are not reproducible or even obtainable. It is not clear from the information set forth in the specification, that when all possible sources of error are taken into account, that the applicant would still be able to show positive results or that the alleged positive results do not fall within the limits of experimental error or, that the alleged positive results are no more than a misinterpretation of experimental data. For example, the examiner has cited several documents that deal with sources of error in cold fusion systems.

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This experimental error, alleged positive results or misinterpretation of experimental data is further attested by Murray (see R. Murray, Iwamura critique of 7/22/1998) wherein numerous explanations of contamination in the EINR system of Iwamura are set forth. Additionally e-mails of K. Shanahan (7/2002) further cast doubt on the nuclide transmutation system of Iwamura. Shanahan and Murray both cite Little et al (Calorimetric study of Pd/Ni Beads From the CETI RIFEX Kit, 1996) to show how and in what manner solids can be contaminated.

The issues presented in the Shanahan e-mails (7/2002) (e.g., purity to five nines, contamination, SIMS, XPS, etc.) pertinent to the enablement of applicant's invention are herein incorporated by reference.

It is not seen wherein the specification discloses any particular structure, etc., which is unique to applicants' system and which makes applicants cold fusion system operative whereas the systems disclosed in the above referenced "numerous teachings by skilled artisans", were not operative.

There is thus, no reputable evidence of record to support the assumption that useful amounts of "nuclide transmutation", "EINR", "excess thermal energy" or enhanced energy, etc., will be produced (such that the invention would find use in any of the uses set in the specification (see page 4+) nor, that the invention would operate as indicated.

The applicant utilizes a first hydrogen absorbing solid material layer, followed by a low work function material layer followed by a second hydrogen absorbing solid material wherein a nuclide transmutation material is laminated on the surface of the first hydrogen absorbing solid

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material layer (see figure 4). Applicant further states that the hydrogen absorbing material can be palladium, palladium alloys, a hydrogen absorbing material other than palladium and its [hydrogen absorbing material other than palladium] alloys; however, the applicant provides no explanation as to why the same apparatus/process can be utilized by other nuclide transmutation materials or what, if any, modifications to the apparatus/process are required; hence, the disclosure is insufficient in this regard. Furthermore, there is no reputable evidence of record showing that any of the postulated models referred to on said pages of the specification, would actually operate to produce the results disclosed in the specification. See Murray, Shanahan and Little.

It is noted in this respect that the specification on page 7, lines 11+, refers to the incorporation of transmutation nuclide onto the hydrogen absorbing material layer by condensing these atoms or compounds onto the surface of the material layer by electrodepositing, vapor deposition or sputtering. However, the disclosure is insufficient and non-enabling as to how and what manner these methods are sufficient to ensure the transmutation nuclide adheres to the surface of the hydrogen absorbing material layer. In addition, the disclosure is insufficient and non-enabling as to where the transmutation nuclide is located in relation to the hydrogen absorbing material layer (i.e., homogeneously, on metal surface layer, below metal surface layer, etc.) upon completion of the electrodepositing, vapor deposition or sputtering process.

It appears from the specification page 18+ that “starting heat” is needed to be applied for nuclide transmutation to occur. However, there is no adequate description nor enabling

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disclosure of how and in what manner, one can assure that the heat generated by the subject reaction (i.e., hydrogenation of transmutation nuclide/Pd/CaO/Pd elements) is produced by reaction and not the “starting heat”. In fact said “starting heat is not claimed in the structure”. That is no heating element is present.

The disclosure is insufficient as it provides no relevance to the actual location of the transmutation nuclide in relation to where the alleged transmutation reaction occurs.

The specification is insufficient in defining how and in what manner, secondary nuclear reactions (i.e., neutrons, gamma rays, electrons, etc.), effect the generated transmutation nuclide or what effect these reactions have on the alleged transmutation reaction and production of heat.

There is no adequate description nor enabling disclosure of a specific operative embodiments of the invention, including: shielding, vessel, electrical control systems, concentration of hydrogen in the absorber materials, nuclear instrumentation..., etc., required for one of ordinary skill in the art to make and/or use the invention.

There is no adequate description nor enabling disclosure of the parameters of a specific operative embodiments of the invention, including: the exact size, dimensions and composition (including degree of purity and the impurities present) of each the materials utilized in the operation of the applicants invention (i.e., applicant must identify his structure/composition in terms of purity, impurities, quantity, etc.); applied current and voltage to the “starting heat”, duration of “starting heat”, mode of operation of “starting heat” (continuous, intermittent, time delay, etc.), control of reaction by pressure (i.e., when applied, amount required to control the

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reaction, etc.); assembly of apparatus (i.e., vessel, vacuum chamber, shielding, instrumentation, gaskets/seals, etc.); calibration of instrumentation during and after experiment; etc.

It is noted that the specification appears to set forth some parameters; however, the specification does not set forth an example of an operative embodiment wherein specific values for each of the parameters are recited.

The disclosure is insufficient in regard to the energy required to initiate and produce the “nuclide transmutation”, EINR” or “excess thermal energy production” by applicants system. In addition the specification is insufficient in the time required to produce the said reaction.

The specification is insufficient in providing sufficient evidence that the pressure diffusion technique utilized would provide the necessary hydrogen absorption needed in the to drive the alleged transmutation reaction.

The disclosure is also insufficient as to the size of materials including thickness (i.e., transmutation nuclide material, etc.) utilized in the transmutation system. Thus without adequate dimensional details the desired “transmutation” could not be experimentally reproduced. Additionally, the specification is not definitive on whether the dimensions set forth for the hydrogen absorber, low work material change based on nuclide transmuted, pressure, temperature, etc.

It is apparent from the specification that applicants’ concept or theory involves a “cold fusion” system based on the “cold fusion” systems that came about from the work of Fleischmann and Pons, is workable or operative, only if these systems are already operative.

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However, as set forth above, the examiner has presented evidence showing that in such cold fusion systems, the claims of transmutation, excess heat (as well as of other nuclear reaction products), are not reproducible or even obtainable. It consequently must follow that the claims of excess heat are not reproducible or even obtainable with applicant's invention. While applicant may have set forth theoretical concepts, it is well known in the cold fusion field that theory and reality have a habit of not coinciding. There is no evidence to indicate applicant has so succeeded where others have failed, in arriving at an operative cold fusion system, i.e. that he has progressed his system beyond the point of an unproven theory or concept which still requires an undue amount of experimentation to enable the artisan to make and use the inventive system for its indicated purpose. This view is also considered supported by the failure to set forth a full example of the specific parameters of an operative embodiment. One cannot rely on the skill in the art for the selection of the proper quantitative values to present an operative cold fusion system, since those in the art do not know what these values would be. See Bank v. Rauland Corp., 64 U.S.P.Q. 93; In re Corneil et al, 145 U.S.P.Q. 697.

To reiterate briefly, the examiner has presented evidence, that neither the situation of "nuclear transmutation", "excess heat" or other, nuclear reaction products, can reasonably be expected to be reproducible or even obtainable with the present invention.

There is no reputable evidence of record that would overcome the experimental showings in the above listed references, disproving this concept of "cold fusion".

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Again, there is no evidence to indicate applicant has so succeeded where others have failed, in arriving at an operative system that produces “nuclear transmutation” or even “excess heat”, i.e., that he has progressed his system beyond the point of an unproven theory of concept which still requires an undue amount of experimentation to enable the artisan to make and use the invention for its indicated purpose.

It is thus considered that the examiner (for the reasons set forth above) has set forth a reasonable and sufficient basis for challenging the adequacy of the disclosure. The statute requires the applicant itself to inform, not to direct others to find out for themselves; In re Gardner et al, 166 U.S.P.Q. 138, In re Scarbrough, 182 U.S.P.Q. 298. Note that the disclosure must enable a person skilled in the art to practice the invention without having to design structure not shown to be readily available in the art; In re Hirsch, 131 U.S.P.Q. 198.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-2 and 4-6 are rejected under 35 U.S.C. 101 because the claimed invention as disclosed is inoperative and therefore lacks utility.

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The reasons that the inventions as disclosed is inoperative are the same as the reasons set forth in section 6 above as to why the specification is objected to and the reasons set forth in section 6 above are accordingly incorporated herein.

There is no reputable evidence of record to indicate the invention has been reduced to the point of providing in current available form, an operative cold fusion system (including one that produces “nuclear transmutation reactions”/“excess thermal energy” by utilizing deposition of hydrogen in solids). The invention is not considered as meeting the requirements of 35 U.S.C. 101 as being “useful”. Note in this respect, Page A14 of the 7/13/89 edition of The Washington Post which indicates that there is no convincing evidence that the “phenomena attributed to cold fusion would produce useful sources of energy”.

The applicant at best, has set forth what may be considered a concept or an object of scientific research. However, it has been held that such does not present a utility within the meaning of 35 U.S.C. 101. See Brenner v. Manson, 148 U.S.P.Q. 689.

Additionally, it is well established that where as here, the utility of the claimed invention is based upon allegations that border on the incredible or allegations that would not be readily accepted by a substantial portion of the scientific community, sufficient substantiating evidence of operability must be submitted by applicant. Note In re Houghton, 167 U.S.P.Q. 687 (CCPA 1970); In re Ferens, 163 U.S.P.Q. 609 (CCPA 1969); Puharich v. Brenner, 162 U.S.P.Q. 136 (CA DC 1969); In re Pottier, 152 U.S.P.Q. 407 (CCPA 1967); In re Ruskin, 148 U.S.P.Q. 221

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(CCPA1966); In re Citron, 139 U.S.P.Q. 516 (CCPA 1963); and In re Novak, 134 U.S.P.Q. 335 (CCPA 1962).

Claim Rejections - 35 USC § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 1-2 and 4-6 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The reasons that the inventions as disclosed are not enabling are the same as the reasons set forth in section 6 above as to why the specification is objected to and the reasons set forth in section 6 above are accordingly incorporated herein.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1-2 and 4-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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a. Claims 1-2 and 4-6 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted element is: a heater (see specification page 18) required to initiate the alleged transmutation reaction.

b. Claim 1 refers to deuterium; however, the deuterium in question is not actively claimed. Accordingly, the meets and bounds of the claim are indefinite. It appears that claim 2 should be incorporated into claim 1.

c. Claim 1 refers to transmutation material binding device; however, the transmutation material in question is not actively claimed. Accordingly, the meets and bounds of the claim are indefinite. It appears that claim 5 should be incorporated into claim 1.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 1 and 4-6 are rejected under 35 U.S.C. 102(b) as anticipated by Iwamura et al (Detection of Anomalous elements, x-rays, and excess heat induced by continuous diffusion of deuterium through multilayer cathode (Pd/CaO/Pd), 7th International Conference on Cold Fusion, p. 167, 1998).

Iwamura et al sets forth an apparatus inherently capable of meeting applicant's claimed inventive concept. That is a nuclide transmutation device comprising: a layered structured body made of palladium/CaO/palladium, an absorption and desorption part surrounding said structured body, a high pressure side on one side of said structured body, a low pressure side on the other side of said structured body and a transmutation material binding device that binds material onto the surface of the structured body.

See figures and entire article.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon (i.e., transmutation material) does not serve to limit an apparatus claim.

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While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

Note that limitations which are considered to be inherent in a reference, note the case law of In re Ludtke, 169 U.S.P.Q. 563; In re Swinehart, 169 U.S.P.Q. 226; In re Fitzgerald, 205 U.S.P.Q. 594; In re Best et al, 195 U.S.P.Q. 430; and In re Brown, 173 U.S.P.Q. 685, 688.

16. Claims 1-2 and 4-6 are rejected under 35 U.S.C. 102(a) as being anticipated by Sakano et al (JP 2000-042388).

Sakano et al sets forth an apparatus inherently capable of meeting applicant's claimed inventive concept. That is a nuclide transmutation device comprising: a layered structured body (11-13) made of palladium/CaO/palladium, an absorption (14) and desorption (15) part surrounding said structured body, a gaseous high pressure side on one side of said structured body, a gaseous low pressure side on the other side of said structured body and a transmutation material binding device that binds material onto the surface of the structured body.

See figures and entire article.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon (i.e., transmutation material) does not serve to limit an apparatus claim.

While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

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17. Claims 1-2 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakano et al (JP 2000-042388) in combination with Iwamura et al (JP 2000-258573).

Sakano set forth applicant's inventive concept (see section 16 above); however, if not apparent that Sakano sets forth a transmutation material layer then Iwamura ('573) teaches the layering of transmutation material on hydrogen absorbing material to promote nuclear reactions in the same field of endeavor (see abstract and columns 1 and 2 (note Cs, Sr, etc.)).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the hydrogen absorber structure of Sakano to have included the transmutation material/nuclear reaction material teachings of Iwamura ('573), to gain the advantages thereof (i.e., reduce radioactive waste, excess energy production, etc.), because such results are in no more than conventionally known cold fusion solid material alternatives for inducing nuclear reactions.

Conclusion

18. The cited prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

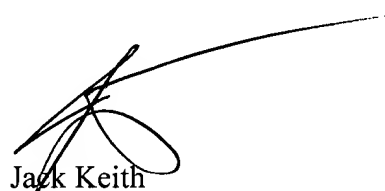
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19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Keith whose telephone number is (703) 306-5752. The examiner can normally be reached on Monday through Friday from 7:00 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone, can be reached on (703) 306-4198.

The fax phone number for the organization where this application or the proceeding is assigned is (703) 305-7687. Fax number for submittals before Final is (703) 872-9326, After Final is (703) 872-9327 and customer service is (703) 872-9325.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.



Jack Keith
Examiner,
Art Unit 3641

jwk

October 23, 2003